

Serial No. 10/589,376
Response to Office Action dated June 25, 2008

PATENT
Docket: CU-5009

REMARKS

Claims 7-14 are pending in the above referenced application and have been examined on their merits in the Office Action dated June 25, 2008. Claims 12 and 14 have been cancelled by the Applicant herein, and therefore, only Claims 7-11, and 13 are discussed in terms of the rejections set forth by the Examiner. In the Office Action, the Examiner rejected Claims 9-14 under 35 U.S.C. §112, second paragraph, Claims 7 and 8 under 35 U.S.C. §102(b), and Claims 7-14 are rejected under 35 U.S.C. §103(a). The rejections set forth in the Official Action have been overcome by amendment or are traversed by argument below.

In the Claims, the Applicant has amended Claims 9, 10, and 11 for clarity. No new matter has been added as a result of the amendments. For instance, the amendment to Claim 11 can be found in originally presented Claim 5. The amendments to these claims can be viewed in the Amendments section in the Listing of Claims beginning on page 2 of this paper.

In the Claims, please cancel Claims 12 and 14.

1. Rejection of Claims 9-14 under 35 U.S.C. §112, second paragraph.

The Examiner rejected Claims 9-14 under 35 U.S.C. §112, second paragraph, for being indefinite. The Applicant has amended Claims 9-11 for clarity, and cancelled Claims 12 and 14. The Applicant believes that the amendments made to the claims overcomes the Examiner's rejection and respectfully submits that the amended claims clearly define the metes and bounds of the Applicant's invention. The Applicant respectfully requests, therefore, that the Examiner withdraw this ground of rejection of the claims.

Serial No. 10/589,376
Response to Office Action dated June 25, 2008

PATENT
Docket: CU-5009

2. Rejection of Claims 7 and 8 under 35 U.S.C. §102(b).

The Examiner rejected Claims 7 and 8 under 35 U.S.C. §102(b) as being anticipated by Singhvi (U.S. 6,368,838) or Spargo (Spatially Controlled Adhesion, Spreading, and Differentiation of Endothelial cells on Self-assembled Molecular Monolayers, PNAS 1999, 91(23), 11070-11074) or Koichi (JP 2003-009870).

The Applicant respectfully disagrees.

To anticipate a claim, each and every element of that claim must be taught by the alleged prior art reference. In the cell culture patterning substrate recited in Claim 7, the cell adhesion auxiliary portion is formed such that, upon adhesion of the cell to the cell adhesion portion, the cells on two cell adhesion portions adjacent to the cell adhesion auxiliary portion can be bound to each other on the cell adhesion auxiliary portion.

In contrast thereto, all of Singhvi, Spargo, and Koichi are silent as to whether the cell adhesion auxiliary portion is formed such that the cells can be bound to each other on the cell adhesion auxiliary portion. In fact, the disclosures of Singhvi, Spargo, and Koichi, clearly illustrate that the non-cell culture regions are formed in a manner so as to prevent cell-to-cell contact between the cell culture regions. (See e.g., column 12, lines 40-45 of Singhvi, Figure 2 of Spargo, and paragraph [0068] and Example 1 of Koichi.)

Although Singhvi, Spargo, and Koichi teach to adhere cells on the cell culture region, which is a region for adhering a cell, the non-cell culture region of each reference is different from that of Claims 7 and 8, the cell adhesion auxiliary portion used in the present invention.

The Applicant submits, therefore, that Claims 7 is not anticipated by Singhvi, Spargo, nor Koichi because none of the references teach each and every element of

Serial No. 10/589,376
Response to Office Action dated June 25, 2008

PATENT
Docket: CU-5009

Claims 7. Claim 8 depends from novel and allowable Claim 7, and therefore, has all of the limitations of Claim 7. The Applicant respectfully requests that the remarks made over Claim 7 be both reflected over dependent Claim 8, and also overcome the rejection of Claim 8. The Applicant respectfully requests, therefore, that the Examiner withdraw the rejection of Claims 7 and 8.

3. Rejection of Claims 7-14 under 35 U.S.C. §103(a).

In the Office Action, the Examiner also rejected Claims 7-14 under 35 U.S.C. §103(a) as obvious over Singhvi.

The Applicant respectfully disagrees.

Regarding Claims 7-10, as discussed extensively in paragraph 2. above, the non-cell culture region of Singhvi is different from the cell adhesion auxiliary portion recited in the cell culture patterning substrate of Claim 7. This difference allows the present invention to attain an advantageous effect of making the arrangement of the cells excellent even when the cell culture region is a large area. (See Specification, page 4 line 16 to page 5 line 4.)

On the other hand, the non-cell culture region of Singhvi *cannot* make the arrangement of the cells excellent when the cell culture region is a large area because the non-cell culture region of Singhvi is different from the cell adhesion auxiliary portion of the present invention. This is illustrated clearly in column 13, lines 12-18 of Singhvi, reciting that the size of the cell culture region is chosen so as to prevent a problem such as cell detachment, which would be caused when the cell culture region is a large area.

Clearly, a person of skill in the art would not find that Singhvi teaches or suggests all of the features of Claim 7. The Applicant respectfully submits that

Serial No. 10/589,376
Response to Office Action dated June 25, 2008

PATENT
Docket: CU-5009

Claim 7 is non-obvious and requests that the Examiner withdraw this ground of rejection as to Claim 7.

It is axiomatic that if an independent claim is allowable, then any claim depending therefrom is also allowable. Since Claim 8 depends from Claim 7, the Applicant respectfully requests that the remarks made over Claim 7 be both reflected in dependent Claim 8 and also overcome the rejection. The additional elements as are found in Claim 8 further serve to distinguish Claim 8 from the alleged prior art. The Applicant respectfully requests that the rejection over Claims 7 and 8 be withdrawn.

Regarding Claims 11-14, of note is that Claims 12 and 14 have been withdrawn and Claim 11 has been amended herein. The cell culture patterning substrate of amended Claim 11 comprises the cell adhesive layer, wherein an edge part of the cell adhesive layer has a concavoconvex shape in a planar view; and further wherein the distance between an edge part of the concave portion and an edge part of the convex portion of the concavoconvex, upon adhesion of the cell to the cell adhesive layer, is a size that the cells are aligned linearly. In other words, the cell adhesive layer of Claim 11 is formed such that the cells can be bound to the non-cell culture region presented between the concave portion and the convex portion of the cell adhesive layer.

In Singhvi, as discussed in detail above, the non-cell culture region is formed in a manner so as to prevent cell to cell contact formed on the cell culture regions. Accordingly, the cell culture region and the non-cell culture region of Singhvi are not formed so that cells are present in the non-cell culture region, and they are different from the cell culture region and the non-cell culture region of Claim 11.

Serial No. 10/589,376
Response to Office Action dated June 25, 2008

PATENT
Docket: CU-5009

Furthermore, such a difference allows the present invention, as claimed in Claim 11, to further regularly arrange cells and attain an advantageous effect of activating more the adhesion of the cells to the cell adhesion portion. (See Specification, page 5, lines 10-19.)

The Applicant respectfully submits that Singhvi does not teach or suggest all of the features of Claim 11 to a person of skill in the art, and therefore, Claim 11 is also non-obvious.

Since Claim 13 depends from Claim 11, the Applicant respectfully requests that the remarks made over Claim 11 be both reflected in dependent Claim 13 and also overcome the rejection. The additional elements as are found in Claim 13 further serve to distinguish Claim 13 from the alleged prior art. The Applicant respectfully requests, therefore, that the rejection over Claims 11 and 13 also be withdrawn.

CONCLUSION

The Applicant believes that this Amendment is responsive to all points raised in the Office Action dated June 25, 2008. The Applicant respectfully contends that all conditions of patentability are met in the pending claims and requests that the amendments be entered into the record. The Applicant respectfully submits that this Application should be in condition for allowance and respectfully requests favorable consideration.

Respectfully Submitted,



Zareefa B. Flener, Pat. Reg. No. 52,896
Attorney for the Applicant

Ladas & Parry, LLP
224 South Michigan Avenue
16th Floor
Chicago, IL 60604
312/427-1300 x 229